CLAIMS

We claim:

1. A method for regulating the operation of a digital radiography detector comprising:

detecting a first triggering event;

acquiring environmental condition data from digital radiography detector;

automatically changing operating state of digital radiography detector based on said detected first triggering event;

determining a variable time interval triggering event from changed operating state of digital radiography detector and acquired environmental condition data;

detecting a second triggering event; and

automatically changing operating state of digital radiography detector at the occurrence of either one of a second triggering event and determined variable time interval triggering event.

2. A method to regulate the operation of a digital radiography detector according to claim 1, wherein that operating state of digital radiography detector is an off state, standby state, and an on state.

3. A method to regulate the operation of a digital radiography detector according to claim 2, wherein an on state causes relative to an off state and a standby state an increase in internal temperature, voltage consumption, power consumption, battery usage;

wherein a standby state causes relative to an off state an increase in internal temperature, voltage consumption, power consumption, battery usage; and

wherein a change from on state to standby state causes a decrease in internal temperature, voltage consumption, power consumption, battery usage.

4. A method to regulate the operation of a digital radiography detector according to claim 3, wherein environmental condition data is one of battery status, battery capacity, error status, internal temperature, ambient temperature, operating state, diagnostic data.

5. A method to regulate the operation of a digital radiography detector according to claim 4, wherein the variable time interval triggering event substantially begins when the first triggering event is detected.

6. A method to regulate the operation of a digital radiography detector according to claim 5, wherein an end of variable time interval triggering event is based on the operating state of the digital radiography detector and environmental condition data.

7. A method to regulate the operation of a digital radiography detector according to claim 6, wherein internal temperature exceeding a preselected level and battery capacity below a preselected level causes the determined time interval triggering event to be substantially zero.

8. A method to regulate the operation of a digital radiography detector according to claim 1, wherein operating state is internal temperature, voltage consumption, power consumption, battery usage;

wherein environmental condition data is one of battery status, battery capacity, error status, internal temperature, ambient temperature, diagnostic data;

wherein the variable time interval triggering event substantially begins when the first triggering event is detected;

wherein end of variable time interval triggering event is based on the operating state of the digital radiography detector and environmental condition data; and

wherein internal temperature exceeding a preselected level and battery capacity below a preselected level causes the determined time interval triggering event to be substantially zero.

9. A computer-accessible medium having executable instructions to regulating the operation of a digital radiography detector, the executable instructions capable of directing a processor to perform:

detecting a first triggering signal;

acquiring environmental condition data from the digital radiography detector;

changing operating state of the digital radiography detector based on said detected first triggering signal;

determining a variable time interval triggering event from changed operating state of the digital radiography detector and acquired environmental condition data;

detecting a second triggering signal; and

changing operating state of the digital radiography detector at the occurrence of either one of a second triggering signal or a determined variable time interval triggering event.

10. The computer-accessible medium of claim 9, wherein the operating state of the digital radiography detector is selected from the group of states consisting of an off state, a standby state, and an on state.

11. The computer-accessible medium of claim 10, wherein the on state causes relative to an off state and a standby state an increase in internal temperature, voltage consumption, power consumption, and battery usage of the digital radiography detector;

wherein a standby state causes relative to an off state an increase in internal temperature, voltage consumption, power consumption, battery usage; and

wherein a change from on state to standby state causes a decrease in internal temperature, voltage consumption, power consumption, battery usage.

12. The computer-accessible medium of claim 9, wherein the environmental condition data is selected from the group of data consisting of a battery status, a battery capacity, an error status, an internal temperature, an ambient temperature, an operating state, and a diagnostic data.

13. The computer-accessible medium of claim 12, wherein the variable time interval triggering event substantially begins when the first triggering signal is detected.

14. The computer-accessible medium of claim 13, wherein an end of variable time interval triggering event is based on the operating state of the digital radiography detector and environmental condition data.

15. The computer-accessible medium of claim 14, wherein the computer-accessible medium further comprises instructions capable of directing a processor to perform: causing the determined time interval triggering event to be substantially zero when internal temperature exceeds a preselected level and when a battery capacity is below a preselected level.

16. The computer-accessible medium of claim 9, wherein operating state is internal temperature, voltage consumption, power consumption, battery usage;

wherein environmental condition data is one of battery status, battery capacity, error status, internal temperature, ambient temperature, diagnostic data;

wherein the variable time interval triggering event substantially begins when the first triggering signal is detected;

wherein end of variable time interval triggering event is based on the operating state of the digital radiography detector and environmental condition data; and

wherein internal temperature exceeding a preselected level and battery capacity below a preselected level causes the determined time interval triggering event to be substantially zero.

17. A computer data signal embodied in a carrier wave and representing a sequence of instructions which, when executed by a processor, cause the processor to perform the method of:

detecting a first triggering event;

acquiring environmental condition data from a digital radiography detector;

automatically changing operating state of digital radiography detector based on said detected first triggering event;

determining a variable time interval triggering event from a changed operating state of digital radiography detector and acquired environmental condition data of the digital radiography detector;

detecting a second triggering event; and

changing the operating state of digital radiography detector at the occurrence of either one of a second triggering event and determined variable time interval triggering event.

18. A computer data signal embodied in a carrier wave and representing a sequence of instructions of claim 17, wherein operating state of digital radiography detector is an off state, standby state, or an on state, at different times.

19. A computer data signal embodied in a carrier wave and representing a sequence of instructions of claim 17, wherein an the state causes relative to the off state and the standby state, an increase in internal temperature, voltage consumption, power consumption, and battery usage of the digital radiography detector;

wherein the standby state causes relative to the off state an increase in internal temperature, voltage consumption, power consumption, and battery usage of the digital radiography detector; and

wherein a change from the on state to the standby state causes a decrease in internal temperature, voltage consumption, power consumption, and battery usage of the digital radiography detector.

20. A computer data signal embodied in a carrier wave and representing a sequence of instructions of claim 19, wherein the environmental condition data is one of a battery status, a

battery capacity, an error status, an internal temperature, an ambient temperature, and an operating state, and diagnostic data.

21. A computer data signal embodied in a carrier wave and representing a sequence of instructions of claim 20, wherein the variable time interval triggering event substantially begins when the first triggering event is detected.

22. A computer data signal embodied in a carrier wave and representing a sequence of instructions of claim 21, wherein an end of the variable time interval triggering event is based on the operating state and the environmental condition data of the digital radiography detector.

23. A computer data signal embodied in a carrier wave and representing a sequence of instructions of claim 22, wherein internal temperature exceeding a preselected level and battery capacity below a preselected level causes the determined time interval triggering event to be substantially zero.

24. A computer data signal embodied in a carrier wave and representing a sequence of instructions of claim 17, wherein the operating state includes internal temperature, voltage consumption, power consumption, and battery usage;

wherein environmental condition data is one of battery status, battery capacity, error status, internal temperature, ambient temperature, diagnostic data;

wherein the variable time interval triggering event substantially begins when the first triggering event is detected;

wherein end of variable time interval triggering event is based on the operating state of the digital radiography detector and environmental condition data;

wherein internal temperature exceeding a preselected level and battery capacity below a preselected level causes the determined time interval triggering event to be substantially zero.

25. A computer data signal embodied in a digital data stream comprising data including manage operation of a medical imaging detector wherein the computer data signal is generated by a method comprising:

detecting a first triggering event;

acquiring environmental condition data from a digital radiography detector;

automatically changing operating state of digital radiography detector based on said detected first triggering event;

determining a variable time interval triggering event from changed operating state of digital radiography detector and acquired environmental condition data;

detecting a second triggering event;

automatically changing operating state of digital radiography detector at the occurrence of either one of a second triggering event and determined variable time interval triggering event;

wherein an operating state of the digital radiography detector is selected from the group consisting of an off state, standby state, and an on state;

wherein an on state causes relative to an off state and a standby state an increase in internal temperature, voltage consumption, power consumption, battery usage;

wherein a standby state causes relative to an off state an increase in internal temperature, voltage consumption, power consumption, battery usage; and

wherein a change from on state to standby state causes a decrease in internal temperature, voltage consumption, power consumption, battery usage.

26. An apparatus for regulating the operation of a digital radiography system comprising:

a receiver of a first triggering signal;

a device for acquiring environmental condition data from digital radiography detector;

a device for changing operating state of digital radiography detector based on said detected first triggering event;

a determiner of a variable time interval triggering event from changed operating state of digital radiography detector and acquired environmental condition data;

a receiver of a second triggering event; and

a device for changing operating state of digital radiography detector at the occurrence of either one of a second triggering event and determined variable time interval triggering event.

27. An apparatus according to claim 26, wherein operating state of digital radiography detector is an off state, standby state, and an on state.

28. An apparatus according to claim 27, wherein an on state causes relative to an off state and a standby state an increase in internal temperature, voltage consumption, power consumption, battery usage;

wherein a standby state causes relative to an off state an increase in internal temperature, voltage consumption, power consumption, battery usage; and

wherein a change from on state to standby state causes a decrease in internal temperature, voltage consumption, power consumption, battery usage.

29. An apparatus according to claim 28, wherein environmental condition data is one of battery status, battery capacity, error status, internal temperature, ambient temperature, operating state, diagnostic data.

30. An apparatus according to claim 29, wherein the variable time interval triggering event substantially begins when the first triggering event is detected.

31. An apparatus according to claim 30, wherein end of variable time interval triggering event is based on the operating state of the digital radiography detector and environmental condition data.

32. An apparatus according to claim 31, wherein internal temperature exceeding a preselected level and battery capacity below a preselected level causes the determined time interval triggering event to be substantially zero.

33. An apparatus according to claim 26, wherein operating state is internal temperature, voltage consumption, power consumption, battery usage;

wherein environmental condition data is one of battery status, battery capacity, error status, internal temperature, ambient temperature, diagnostic data;

wherein the variable time interval triggering event substantially begins when the first triggering event is detected.;

wherein end of variable time interval triggering event is based on the operating state of the digital radiography detector and environmental condition data; and

wherein internal temperature exceeding a preselected level and battery capacity below a preselected level causes the determined time interval triggering event to be substantially zero.

34. An apparatus according to claim 33, wherein the receiver, the device for changing and the determiner are components within a computer.

35. A method for managing the power and temperature of a device comprising:

receiving a request for a function to be performed by the device;

determining from the received request for a function to be performed by the device an on trigger component, an off trigger component, associated circuits for performing the received function;

providing power to the associated circuits upon the occurrence of the on trigger component; and

removing power to the associated circuits upon the occurrence of the off trigger component.

36. The method for managing the power of device according to claim 35,

wherein the device is a digital radiography detector; and

wherein the function requested is selected from integrate x-ray signal, read pixel array, scrub pixel array, read sensors, and perform diagnostics.

37. The method for managing the power of device according to claim 36,

wherein the on trigger component is selected from x-ray prep switch, compression paddle motion, command from system, fixed time without activity timeout, command from system, activation switch, and reset switch.

38. The method for managing the power of device according to claim 37,

wherein the off trigger component is selected from end of readout of x-ray frame, end of readout of offset frame, timeout fixed time without any activity, end of readout, end of reading sensors, end of transmitting data, diagnostic tests complete, diagnostic test data transferred.

39. The method for managing the power of device according to claim 38,

wherein the associated circuits is selected from panel bias, scan row enable, data column enable, transmit, receive, optical power sense, control circuitry, sensor circuitry.

40. A computer-accessible medium having executable instructions to manage the power and temperature of a device, the executable instructions capable of directing a processor to perform:

receiving a request for a function to be performed by the device;

determining from the received request for a function to be performed by the device an on trigger component, an off trigger component, associated circuits for performing the received function;

providing power to the associated circuits upon the occurrence of the on trigger component; and

removing power to the associated circuits upon the occurrence of the off trigger component.

41. The computer-accessible medium of claim 40, wherein the device further comprises a digital radiography detector; and

wherein the function requested is selected from integrate x-ray signal, read pixel array, scrub pixel array, read sensors, and perform diagnostics.

42. The computer-accessible medium of claim 41, wherein the on trigger component is selected from x-ray prep switch, compression paddle motion, command from system, fixed time without activity timeout, command from system, activation switch, and reset switch.

43. The computer-accessible medium of claim 42, wherein the off trigger component is selected from end of readout of x-ray frame, end of readout of offset frame, timeout fixed time without any activity, end of readout, end of reading sensors, end of transmitting data, diagnostic tests complete, diagnostic test data transferred.

44. The computer-accessible medium of claim 43, wherein the associated circuits is selected from panel bias, scan row enable, data column enable, transmit, receive, optical power sense, control circuitry, sensor circuitry.

45. A computer data signal embodied in a carrier wave and representing a sequence of instructions which, when executed by a processor of a device, cause the processor to perform the method of:

receiving a request for a function to be performed by the device;

determining from the received request for a function to be performed by the device an on trigger component, an off trigger component, and associated circuits for performing the received function;

providing power to the associated circuits upon the occurrence of the on trigger component; and

removing power to the associated circuits upon the occurrence of the off trigger component.

46. A computer data signal embodied in a carrier wave and representing a sequence of instructions of claim 45 wherein the device is a digital radiography detector; and

wherein the function requested is selected from integrate x-ray signal, read pixel array, scrub pixel array, read sensors, and perform diagnostics.

47. A computer data signal of claim 46, wherein the on trigger component is selected from x-ray prep switch, compression paddle motion, command from system, fixed time without activity timeout, command from system, activation switch, and reset switch.

48. A computer data signal of claim 47, wherein the off trigger component is selected from end of readout of x-ray frame, end of readout of offset frame, fixed time without any activity timeout, end of readout, end of reading sensors, end of transmitting data, diagnostic tests complete, and diagnostic test data transferred.

49. A computer data signal of claim 48, wherein the associated circuits is selected from panel bias, scan row enable, data column enable, transmit, receive, optical power sense, control circuitry, and sensor circuitry.

50. A computer data signal embodied in a digital data stream comprising data including a representation of instructions for managing the power and temperature of a device, wherein the computer data signal is generated by a method comprising:

receiving a request for a function to be performed by the device;

determining from the received request for a function to be performed by the device an on trigger component, an off trigger component, and associated circuits;

providing power to the associated circuits upon the occurrence of the on trigger component; and

removing power to the associated circuits upon the occurrence of the off trigger component thereby lowering the temperature of the device.

51. A computer data signal embodied in a digital data stream comprising data including a representation of instructions for managing the power and temperature of a device, wherein the computer data signal is generated by a method comprising:

receiving a request for a function to be performed by the device;

determining from the received request for a function to be performed by the device an on trigger component, an off trigger component, associated circuits for performing the received function;

providing power to the associated circuits upon the occurrence of the on trigger component; and

removing power to the associated circuits upon the occurrence of the off trigger component;

wherein the device is a digital radiography detector;

wherein the function requested is selected from integrate x-ray signal, read pixel array, scrub pixel array, read sensors, and perform diagnostics;

wherein the on trigger component is selected from x-ray prep switch, compression paddle motion, command from system, timeout fixed time without activity, command from system, activation switch, and reset switch;

wherein the off trigger component is selected from end of readout of x-ray frame, end of readout of offset frame, fixed time without any activity timeout, end of readout, end of reading sensors, end of transmitting data, diagnostic tests complete, and diagnostic test data transferred;

wherein the associated circuits is selected from panel bias, scan row enable, data column enable, transmit, receive, optical power sense, control circuitry, and sensor circuitry.

52. Apparatus for managing power and temperature of a device comprising:

a receiver for receiving a request for a function to be performed by the device;

a determiner for determining from the received request for a function to be performed by the device an on trigger component, an off trigger component, associated circuits for performing the received function;

a provider for providing power to the associated circuits upon the occurrence of the on trigger component;

a remover for removing power to the associated circuits upon the occurrence of the off trigger component.

53. The apparatus for managing the power of device according to claim 52,

wherein the device is a digital radiography detector;

wherein the function requested is selected from the group consisting of integrate x-ray signal, read pixel array, scrub pixel array, read sensors, and perform diagnostics.

54. The apparatus for managing the power of device according to claim 53,

wherein the on trigger component is selected from x-ray prep switch, compression paddle motion, command from system, fixed time without activity timeout, command from system, activation switch, and reset switch.

55. The apparatus for managing the power of device according to claim 54,

wherein the off trigger component is selected from end of readout of x-ray frame, end of readout of offset frame, timeout fixed time without any activity, end of readout, end of reading sensors, end of transmitting data, diagnostic tests complete, diagnostic test data transferred.

56. The apparatus for managing the power of device according to claim 55,

wherein the associated circuits is selected from panel bias, scan row enable, data column enable, transmit, receive, optical power sense, control circuitry, sensor circuitry.

57. A method to manage power consumption of a device to regulate the internal temperature of the device comprising:

receiving an activation signal;

changing said device from an off power consumption state to an idle power consumption state based on said activation signal;

receiving a deactivation signal and a predictor signal;

changing said device upon the occurrence of both received deactivation signal and predictor signal of to an on state power consumption;

changing said device upon the occurrence of the deactivation signal to the off state power consumption;

wherein a change from a standby state to the on state causes an increase in internal temperature, voltage consumption, power consumption, and battery usage of the digital radiography detector; and

wherein a change from a standby state to the off state causes a decrease in internal temperature, voltage consumption, power consumption, and battery usage of the digital radiography detector.